

# PATENT SPECIFICATION

NO DRAWINGS

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## COMPLETE SPECIFICATION

### Method of Increasing the Coefficient of Friction of Paper Usable as a Packaging Material

We, SKOGSÄGARNAS INDUSTRIT AKTIE-BOLAG, a Swedish Corporate Body, of Strömsnäsbruk, Sweden, do hereby declare the invention for which we pray that a 5 patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates to a method 10 of increasing the coefficient of friction of paper usable as a packaging material, for example paper used to produce paper sacks.

If the outer surface of paper sacks is too 15 slippery, stacking of the sacks is very difficult since the sacks tend to fall down.

According to the invention, there is provided a method of increasing the coefficient of friction of paper, wherein the paper is roughened on one side by means of a roll 20 having a carding means on its curved surface and which co-operates with a counter pressure roll in contact with the other side of the paper, said counter pressure roll having a substantially smooth surface.

The carding means preferably comprises 25 steel bristles, although bristles of other materials such as plastics fibres can be used instead. The rolls can be rotated either in the same or in the opposite direction to the direction of movement of the paper there-through and the roll speed can either be equal to or higher than the speed at which the paper is advanced. The counter pressure roll 30 may be coated with rubber or other materials.

In order to obtain a continuous process 35 either the roll or the carding means on the roll will have to be cleaned from time to time. Such cleansing can be effected by means

of a water spray, compressed air or complementary cleansing roll.

In one practical example, a web of kraft paper having a surface weight of about 60 to 125 g/m<sup>2</sup> was treated in accordance with the method by a carding roll provided with steel bristles. The roll was rotated in the same direction as the direction of movement of the paper web and at a speed three times that of said web. A rubber roll was used as a counter pressure roll on the other side of the paper web. After treatment the coefficient of friction of the paper was 0.59 in comparison with 0.35 before treatment and good results were obtained when printing the roughened surface in a conventional flexographic printing apparatus, the printability of the surface being better than that of a lightly corrugated (creped) surface.

The invention can be advantageously applied to paper having a higher surface weight, e.g. 150 g/m<sup>2</sup> and the paper used can be unbleached, semi-bleached or bleached.

#### WHAT WE CLAIM IS:—

1. A method of increasing the coefficient of friction of paper, wherein the paper is roughened on one side by means of a roll having a carding means on its curved surface and which co-operates with a counter pressure roll in contact with the other side of the paper, said counter pressure roll having a substantially smooth surface.

2. A method of treating paper substantially as hereinbefore described with reference to the example.

3. A paper when treated by the method as claimed in claim 1 and claim 2.

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4. A paper sack formed from paper when treated by the method as claim in claim 1 and claim 2.

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